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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/913,451	08/14/2001	Detlef Stoll	P01.0271	9828
29177	7590	04/28/2006	EXAMINER	
BELL, BOYD & LLOYD, LLC P. O. BOX 1135 CHICAGO, IL 60690-1135			SINGH, DALZID E	
			ART UNIT	PAPER NUMBER
			2613	

DATE MAILED: 04/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/913,451

Applicant(s)

STOLL ET AL.

Examiner

Dalzid Singh

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16-31 is/are pending in the application.  
4a) Of the above claim(s) 18-22, 26 and 27 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 16, 17, 23-25 and 28-31 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 16, 17, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al (US Patent No. 6,545,783) in view of Gerstel et al (US Patent No. 6,721,508).

Regarding claim 16, Wu et al disclose add-drop multiplexer system, as shown in Fig. 9, comprising:

a group filter (101) which divides an incoming WDM signal into a plurality of channel groups ( $\lambda_1, \lambda_3, \lambda_5 \dots$  and  $\lambda_2, \lambda_4, \lambda_6 \dots$ ) with channels of different wavelengths;

a plurality of different exchangeable modules (such as elements (201, 501 and 202) and (203, 502 and 204)) each of which connect to a respective channel group ( $\lambda_1, \lambda_3, \lambda_5 \dots$  and  $\lambda_2, \lambda_4, \lambda_6 \dots$ ) for connecting through and branching off channels (add/drop switch array (501 or 502) provide connecting through and branching off channels);

wherein each of plurality of different exchangeable modules comprises at least one of a first, a second, and a third module types (the exchangeable module comprise first module types such as elements (201, 501 and 202));

the first module type being of connected-through and add-drop channels with which longer-term connections of the channels of a channel group are realized (the first module type (201,501 and 202) is for connected-through and add-drop channels); and a combination filter (111) which receives and combines reconfigured channel groups outputted from the plurality of different exchangeable modules depending on their type, wherein the combination filter forms an outgoing WDM signal.

Wu et al disclose first module type as discussed above and differ from the claimed invention in that Wu et al do not specifically disclose that the first module type being for manual reconfiguration of connected-through and add-drop channels. However, manual reconfiguration of connected-through and add-drop channels is well known. Gerstel et al is cited to show such well known concept. In col. 4, lines 61-67 to col. 5, lines 1-5, Gerstel et al disclose manual configuration of add-drop channels. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to modify the first module type of Wu et al to provide manual reconfiguration functionality as taught by Gerstel et al in order to connect-through and add-drop channels. One of ordinary skill in the art would have been motivated to do such in order to provide operational connect-through and add-drop capability in the event that remote controlling of the module is not operational.

Regarding claim 17, as shown in Fig. 9, Wu et al show that the first module type (201,501 and 202) comprises substantially a WDM demultiplexer (201), configurable switching unit (501), and a WDM multiplexer (202). Wu et al disclose first module type as discussed above and differ from the claimed invention in that Wu et al do not

specifically disclose that the configurable switch is manually configurable switch.

However, as discussed above, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to modify the first module type of Wu et al to provide manual reconfiguration functionality as taught by Gerstel et al in order to connect-through and add-drop channels. One of ordinary skill in the art would have been motivated to do such in order to provide operational connect-through and add-drop capability in the event that remote controlling of the module is not operational.

Regarding claim 30, Wu et al disclose add-drop multiplexer system, as shown in Fig. 9, comprising:

a plurality of add-drop multiplexing devices (such as elements (201, 501 and 202) and (203, 502 and 204)) connected to one another via optical waveguides; and

each of the add-drop multiplexing devices comprising a group filter (101) which divides an incoming WDM signal into a plurality of channel groups ( $\lambda_1, \lambda_3, \lambda_5 \dots$  and  $\lambda_2, \lambda_4, \lambda_6 \dots$ ) with channels of different wavelengths, a plurality of different exchangeable modules (such as elements (201, 501 and 202) and (203, 502 and 204)) each of which connects to a respective channel group for connecting through and branching off channels, the exchangeable modules comprising at least one of first, second, and third module types;

the first module type being for connected-through and add-drop channels with which longer-term connections of the channels of a channel group are realized (the first module type (201, 501 and 202) is for connected-through and add-drop channels); and

a combination filter (111) which receives and combines reconfigured channel groups outputted from the plurality of different exchangeable modules depending on their type, wherein the combination filter forms an outgoing WDM signal.

Wu et al disclose first module type as discussed above and differ from the claimed invention in that Wu et al do not specifically disclose that the first module type being for manual reconfiguration of connected-through and add-drop channels. However, manual reconfiguration of connected-through and add-drop channels is well known. Gerstel et al is cited to show such well known concept. In col. 4, lines 61-67 to col. 5, lines 1-5, Gerstel et al disclose manual configuration of add-drop channels. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to modify the first module type of Wu et al to provide manual reconfiguration functionality as taught by Gerstel et al in order to connect-through and add-drop channels. One of ordinary skill in the art would have been motivated to do such in order to provide operational connect-through and add-drop capability in the event that remote controlling of the module is not operational.

Regarding claim 31, Wu et al disclose add-drop multiplexer system, as shown in Fig. 9, comprising:

a group unit (101) which divides an incoming WDM signal into a plurality of channel groups;

a plurality of different exchangeable modules (such as elements (201, 501 and 202) and (203, 502 and 204)) each of which connect to a respective channel group for connecting through and branching off channels;

the exchangeable modules comprising at least one of first, second, and third module types, the first module type being for reconfiguration of connected-through and add-drop channels with which longer-term connections of the channels of a channel group are realized (the first module type (201,501 and 202) is for connected-through and add-drop channels); and

a combination unit (111) receives and combines reconfigured channel groups outputted from the plurality of different exchangeable modules depending on their type, wherein the combination filter forms an outgoing WDM signal.

Wu et al disclose first module type as discussed above and differ from the claimed invention in that Wu et al do not specifically disclose that the first module type being for manual reconfiguration of connected-through and add-drop channels. However, manual reconfiguration of connected-through and add-drop channels is well known. Gerstel et al is cited to show such well known concept. In col. 4, lines 61-67 to col. 5, lines 1-5, Gerstel et al disclose manual configuration of add-drop channels. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to modify the first module type of Wu et al to provide manual reconfiguration functionality as taught by Gerstel et al in order to connect-through and add-drop channels. One of ordinary skill in the art would have been motivated to do such in order to provide operational connect-through and add-drop capability in the event that remote controlling of the module is not operational.

3. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al (US Patent No. 6,545,783) in view of Gerstel et al (US Patent No. 6,721,508) and further in view of Gaudino et al "Remote Provisioning of a Reconfigurable WDM Multichannel Add/Drop Multiplexer".

Regarding claim 23, as shown in Fig. 9, the combination of Wu et al and Gerstel et al shows plurality of module types (see Fig. 9 of Wu et al) and differ from the claimed invention in that the combination does not show a fourth module type, wherein said fourth module type establishes a remote configuration of drop-continue channels by coupling out a part of an incoming signal of a channel group and transmitting the other part. However, remote configuration of drop-continue channels is well known. Gaudino et al teach such well known concept (see abstract). Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide remote configuration as taught by Gaudino et al to the system of the combination. One of ordinary skill in the art would have been motivated to do such in order to provide flexibility of drop-continue of the signal.

4. Claims 24, 25, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al (US Patent No. 6,545,783) in view of Gerstel et al (US Patent No. 6,721,508) in view of Gaudino et al "Remote Provisioning of a Reconfigurable WDM Multichannel Add/Drop Multiplexer" and further in view of Liu et al (US Patent No. 6,208,443).



Regarding claim 24, the combination of Wu et al, Gerstel et al and Gaudino et al differ from the claimed invention in that the combination does not disclose that the fourth module type has a coupling device for coupling out at least part of a signal representing the incoming WDM signal and a circulator and also at least one tunable filter for coupling out specific channels of said channel group. However, it is well known to form drop-continue functionality using circulators and tunable filters. Liu et al is cited to show such well known concept. In Fig. 5, Liu et al show circulator (404) and tunable filter (402) for drop-continue functionality. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide drop-continue functionality using circulators and tunable filters. One of ordinary skill in the art would have been motivated to do such in order to reduce crosstalk between channels.

Regarding claim 25, the combination of Wu et al, Gerstel et al and Gaudino et al show at least one filter arrangement acting as a WDM demultiplexer for separating the coupled-out WDM signal into a plurality of channels of different wavelength (see Fig. 9 of Wu et al).

Regarding claim 28, the combination of Wu et al, Gerstel et al and Gaudino et al differ from the claimed invention in that the combination does not disclose the fourth module includes a plurality of tunable filters and an additional WDM demultiplexer receiving the coupled-out part of the signal representing the channel group, designated for outputting a number of the channels which corresponds to a number of the tunable filters. However, it is well known to form drop-continue functionality using demultiplexer and tunable filters. Liu et al is cited to show such well known concept. In Fig. 5, Liu et

al show tunable filter (402) and demultiplexer (512) for drop-continue functionality. In col. 7, lines 52-57, Liu et al disclose that any channel can be dropped. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide drop-continue functionality using tunable filters and demultiplexer. One of ordinary skill in the art would have been motivated to do such in order to separate each channel.

Regarding claim 29, as shown in Fig. 9, Wu et al show that the channels of at least one of the channel groups are adjacent in terms of frequency (the channels are spaced closely together, therefore the channels are adjacent).

### ***Response to Arguments***

5. Applicant's arguments filed 12 April 2006 have been fully considered but they are not persuasive.

On the remarks, applicant argues that the cited art fails to teach a plurality of different exchangeable modules. As shown in Fig. 9, Wu et al shows plurality of exchangeable modules (first exchangeable module (201, 202 and 501) and second exchangeable module (203, 204 and 502)). Although the claim recites "plurality of different exchangeable modules...the exchangeable modules comprising at least one of a first, second and a third modules types;" the phrase "**at least one of** a first, second and a third modules types" indicates that it is sufficient to have one module type in each of the plurality of exchangeable modules. The cited art, Wu, shows plurality of exchangeable modules with at least one module type in each exchangeable module.

Furthermore, applicant indicates that the modules of the cited art are not different. As shown in Fig. 9, the modules receive different sets of wavelength such as odd channels and even channels. In order to process the different sets of channels, it would have been obvious that the modules are different. For example, the modules comprise interference filters (201 or 203) which have different characteristics so that different sets of channels can be passed.

Furthermore, the applicant indicates that nowhere in Wu is it taught that the devices are exchangeable. As shown in Fig. 9, one of the module (201, 501 and 202) exchange optical signals by adding, dropping or pass-through, therefore the modules are considered as exchangeable modules.

Based on these, the prior arts still read on the claimed subject matter.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Art Unit: 2613

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DS

April 26, 2006

*David Singh*